

ABSTRACT OF THE DISCLOSURE

Disclosed is a wavelength-division multiplexing optical transmission system in which an optical lossy medium, optical amplifiers and Raman amplifiers for compensating for loss in the optical lossy medium are cascade-connected. The system includes power-level equalizing means for equalizing optical power levels input to an optical amplifier of a succeeding stage by adjusting excitation ratio of a Raman amplifier; optical-SNR equalizing means for adjusting power levels at a transmitting end to equalize optical SNRs at a receiving end; and correction-value acquisition means for acquiring a correction value that represents an amount of change in power of each wavelength before and after optical-SNR equalization control. At control for equalizing power levels by a Raman amplifier, the power-level equalizing means performs equalization control using the correction value that represents the amount of change in power of each wavelength before and after optical-SNR equalization control the previous time, and the optical-SNR equalizing means subsequently performs optical-SNR equalization control.